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APPLICATION NO.	FILING DATE:	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,430	04/03/2001	Tadashi Takano	SIMTEK6140	4775

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EXAMINER

PHAM, LEDA T

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 11/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/681,430	TAKANO, TADASHI	
	Examiner	Art Unit	
	Leda T. Pham	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
- 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
- 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "sleeve bearing" in claim 20, 23, 30, and 33, and "the cylindrical post is detachably connected to the second end closure" in claim 22 and claim 32 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1, 26 –27 are objected to because of the following informalities:

In claim 1 line 4 – 5, and claim 27 line 4, "said first end closures" should be change to -- said first end closure--.

In claim 7, "the plurality of field cores are" should be change to --the plurality of field cores is--.

In claim 26 line 3, "the associated rotating machine" lacks of antecedent basis.

In claim 27 line 6, "an cylindrical" should be change to -- a cylindrical--

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In those claim, the term "extending through" is indefinite because in the specification and the drawing, the rotor does not extending through the first end closure (see all the figure). According to the specification the driving shaft portion only extending into a cavity form in the first end closure.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 – 3, 5 – 7, 9 – 12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanura et al. (U.S. Patent No. 5,235,228) in view of Mulgrave (U.S. Patent No. 5,710,474).

Referring to claim 1, Nakanura teaches in figure 1 a rotating electrical machine comprised of an outer housing forming a stator (10) of said rotating electrical machine, said outer housing being comprised of a generally cylindrical center section (the part outside the core stator 10) and affixed first and second end closures (the part attach to end 18 and bearing 20R, 16), a rotor (12) journaled within said outer housing and extending through said first end closures (shaft 14 extending through the part attach to end 18 and bearing 20R) for driving connection to a related rotating machine (24G and 24S), said first end closure forming a cavity in which a

substantial portion of said related rotating machine is contained (see figure 1). Nakanura, however, does not teach the rotating machine is DC or AC.

Mulgrave teaches a machine using a brushless DC motor for generating high efficiencies with high torque output (line 5–10, column 1).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Nakanura's rotating electric machine with a DC motor as taught by Mulgrave. Doing so would improve a DC rotating electric machine with high efficiencies in high torque output.

Referring to claim 2, Nakanura teaches a third end closure (the part above first end closure as described above) is affixed in closing relation to the cavity of the first end closure for containing the related rotating machine (24G and 24S) within the cavity of said first end closure.

Referring to claim 3, Nakanura teaches the first and second end closures are axially spaced from each other and the second end closure is integrally formed with an axially extending cylindrical center section (figure 1).

Referring to claim 5, Nakanura teaches the first end closure is axially spaced from the axially extending cylindrical center section (space by 18, figure 1).

Referring to claim 6 and claim 11, Nakanura teaches the stator made up a plurality of field coils (figure 1).

Referring to claim 7, Nakanura teaches the plurality of field coils is wound around a laminated core (figure 1).

Referring to claim 9, Mulgrave teaches the DC rotating electrical machine is brushless.

Referring to claim 10, Mulgrave teaches the DC rotating electrical machine further including a sensor (43) contained within the outer housing for sensing the rotational position of said rotor (figure 2).

Referring to claim 12, Mulgrave teaches the DC rotating electrical machine wherein a controller (44) responsive to the output of the sensor switches the polarity of the field coils (lines 57 – 65, column 4).

Referring to claim 16, Mulgrave teaches the controller (44) is mounted on the exterior of the DC rotating electrical machine (figure 2).

7. Claims 1, 3 – 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kempken (U.S. Patent No. 4,748,357) in view of Mulgrave.

Referring to claim 1, Kempken teaches in figure 1 a rotating electrical machine comprised of an outer housing forming a stator (4b) of said rotating electrical machine, said outer housing being comprised of a generally cylindrical center section (4a) and affixed first (2) and second end closures (4c), a rotor (4e) journaled within said outer housing and extending through said first end closures for driving connection to a related rotating machine (gear 7), said first end closure forming a cavity in which a substantial portion of said related rotating machine is contained (see figure 1). Kempken, however, does not teach the rotating machine is DC or AC.

Mulgrave teaches a machine using a brushless DC motor for generating high efficiencies with high torque output (line 5 –10, column 1).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kempken's rotating electric machine with a DC motor as taught

by Mulgrave. Doing so would improve a DC rotating electric machine with high efficiencies in high torque output.

Referring to claim 3, Kempken teaches the first and second end closures are axially spaced from each other and the second end closure is integrally formed with an axially extending cylindrical center section (figure 1).

Referring to claim 4, Kempken teaches the first end closure (29) is in abutting relation to the axially extending cylindrical center section (figure 1).

8. Claims 8, 13 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Nakanura and Mulgrave as applied to claim 3, 9 above, and further in view of Hoda et al. (U.S. Patent No. 6,22,715 B1).

Referring to claim 8, the combination of Nakanura and Mulgrave refs. teaches the claimed invention except for the added limitation of the lamination core is exposed between the first and second end closures.

Hoda teaches a construction of a motor with a built-in sensor (figure 1) having a stator (2) with the lamination core is exposed between the first (25) and second end closures (10) for decreasing the length of the motor.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the lamination core of the stator in the DC rotating electrical machine as taught by Hoda. Doing so would decrease the length of the motor and make the motor lighter.

Referring to claim 13, the combination of Nakanura and Mulgrave refs. teaches the claimed invention except for the added limitation of the controller is mounted in the interior of the DC rotating electrical machine.

Hoda teaches in his invention the controller (24) is mounted in the interior of the DC rotating electrical machine (figure 1) for decreasing the length of the motor.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange position of the controller of the DC rotating electrical machine as taught by Hoda. Doing so would decrease the length of the motor.

Referring to claim 14, Hoda teaches the controller (24) is mounted axially between the first (25) and the second (10) end closures.

Referring to claim 15, Hoda teaches the controller (24) is mounted in a cylindrical member (11) interposed between the first and second end closures (25, 10).

9. Claims 17 – 19, 26 - 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Nakanura and Mulgrave as applied to claim 1 above, and further in view of Shimizu et al. (U.S. Patent No. 6,163,093).

Referring to claim 17 and claim 27, the combination of Nakanura and Mulgrave teaches the claimed invention except for the added limitation of the second end closure carries a cylindrical post extending into a cylindrical opening in the rotor for journaling said rotor within the outer housing.

Shimizu teaches a pump actuation motor having a second end closure (15) carries a cylindrical post (15a) extending into a cylindrical opening in the rotor (12a) for supporting the end side of the rotation shaft (figure 2).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the end closure of the housing as taught by Shimizu. Doing so would increase in the assembling efficiency by decreasing in the quantity of the parts and enhancement of the durability.

Referring to claim 18 and claim 28, Shimizu teaches the cylindrical post (15a) extends a substantial distance axially into the rotor (12).

Referring to claim 19 and claim 29, Shimizu teaches the cylindrical post (15a) engages a bearing (28) associated with the rotor (12).

Referring to claim 26, Shimizu teaches the DC rotating electrical machine comprising a motor and the related rotating machine is a hydraulic pump (figure 1).

10. Claims 20, 22 – 23, 30, and 32 - 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Nakanura, Mulgrave, and Shimizu as applied to claim 19 above, and further in view of Buchanan, Jr. (U.S. Patent No. 5,644,180).

Referring to claim 20, 23, 30 and 33, the combination refs. of Nakanura, Mulgrave, and Shimizu teaches the claimed invention, except for the added limitation of the sleeve type bearing.

Buchanan teaches in his invention the bearing (50) associated with the rotor (40) is sleeve type bearing for supporting the other end of the rotary shaft (figure 2 –4).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select the sleeve bearing for supporting the end of the shaft as taught by Buchanan. Doing so would provide a low cost bearing.

Referring to claim 22 and claim 32, Buchanan teaches the cylindrical post (52) is detachably connected to the second end closure (36, figure 2).

11. Claims 21, 24 – 25, 31, and 34 - 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Nakanura, Mulgrave, and Shimizu as applied to claim 19 above, and further in view of Obara (U.S. Patent No. 6,246,137 B1).

Referring to claim 21, 24, 31, and claim 34, the combination refs. of Nakanura, Mulgrave, and Shimizu teaches the claimed invention, except for the added limitation of the anti friction bearing.

Obara teaches in his invention the bearing (3, 4) associated with the rotor (2) is anti friction bearing for supporting the rotary shaft.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select the anti friction bearing for supporting the rotary shaft as taught by Obara. Doing so would provide a spindle motor with high accuracy of rotation.

Referring to claim 25 and claim 35, Shimizu teaches the cylindrical post (15a) is integrally formed with the second end closure (15).

Response to Amendment

12. This action is made non-final regarding to the Appeal brief.

13. In view of the appeal brief filed on 7/03/03, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

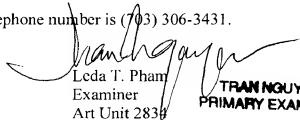
If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leda T. Pham whose telephone number is (703) 305-4864. The examiner can normally be reached on M-F (7:30-5:00) first Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.


Leda T. Pham
Examiner
Art Unit 2834
**TRAN NGUYEN
PRIMARY EXAMINER**

LTP
October 20, 2003